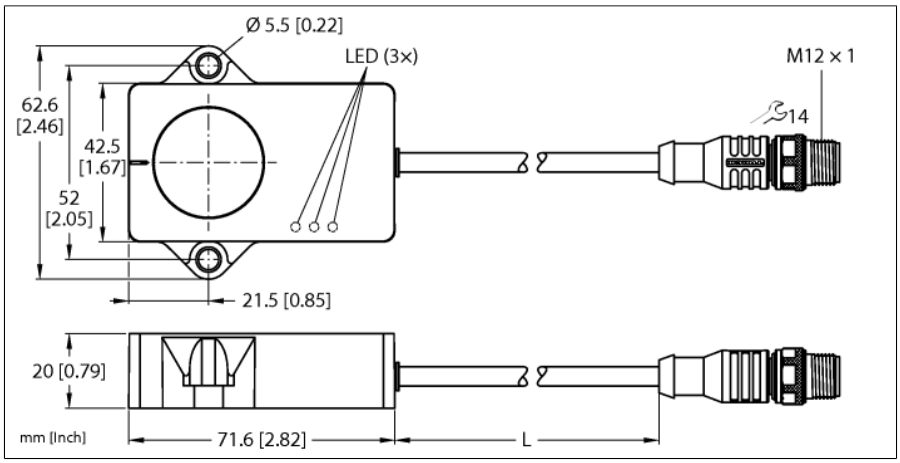
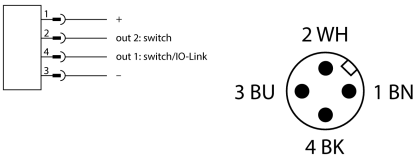
Vibration & Temperature Sensor
For Condition Monitoring with IO-Link
CMVT-QR20-IOLX3-0.3-RS4



Type	CMVT-QR20-IOLX3-0.3-RS4
ID	100029966
Vibration — Acceleration	
Sampling rate of the acceleration measuring cell	6.6 KHz
RMS measuring range	16 g
RMS resolution	0.01 g
RMS linearity deviation, typical	≤ ±3 % @ 78 Hz
RMS repeatability, typical	≤ ±5 % @ 78 Hz
Vibration — Speed	
RMS measuring range	0...320 mm/s @ 78 Hz
RMS resolution	0.01 mm/s
RMS linearity deviation, typical	≤ ±1 % @ 78 Hz
RMS repeatability, typical	≤ ±5 % @ 78 Hz
Temperature	
Temperature measuring range	-40…85 °C
Temperature linearity deviation	≤ 1 %
Temperature repeatability	≤ ± 2.4 %
Electrical data	
Operating voltage U_B	18…30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
Isolation test voltage	0.5 kV
Communication protocol	IO-Link
Current consumption	< 50 mA
IO-Link	
Communication mode	COM 3 (230.4 kBaud)
Function pin 4	IO-Link/SIO
Function Pin 2	SIO

- Rectangular, plastic, Ultem
- Status displayed via LED
- Acceleration and speed output RMS or peak to peak of the vibration
- Acceleration measuring range 16 g
- Detection over 3 axes
- Temperature measuring range -40 °C to +85 °C
- High protection class IP68/IP69K
- 18…30 VDC, communication via IO-Link
- 10…30 VDC, SIO mode PNP/NPN switching outputs
- Cable with male connector, M12 × 1, 4-pin

Wiring Diagram



Functional principle

Condition monitoring sensors help to prevent unplanned downtimes and malfunctions during the production process. They monitor the condition of the machine as a preventative measure.

Using the CM sensors can prevent system downtime or machine damage, which in turn improves system effectiveness and allows uninterrupted operation.

The use of CMVT sensors also directly benefits the user in a quantifiable way.

Information on vibration and temperature is output via the standardized IO-Link protocol. Warning and alarm messages are also displayed via simple switching outputs.

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Mechanical data	
Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Housing material	Plastic, Ultem
Electrical connection	Cable with connector, M12 × 1
Cable quality	Ø 4.5mm, PUR, 0.3 m
	Halogen free, flame retardant acc. to IEC 60332-2-2 and UL FT2
Core cross-section	4 x 0.34 mm²

Environmental conditions	
Ambient temperature	-40…+85 °C
Temperature changes (EN60068-2-14)	-40… +85 °C; 20 cycles
Vibration resistance (EN 60068-2-6)	20 g; 5 h/axis; 3 axes
Shock resistance (EN 60068-2-27)	200 g; 4 ms ½ sine
Protection class	IP68 IP69K
MTTF	548 years acc. to SN 29500 (Ed. 99) 40 °C

Power-on indication	LED, Green
Switching state	2 × LEDs, Yellow
UL certificate	E351232

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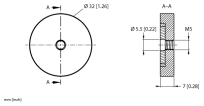
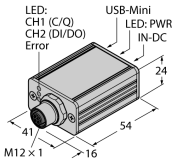
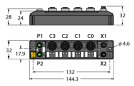
Accessories

Type code	Ident-No.		Dimension drawing
MAGKIT-M5	100036073	Mounting magnet for mounting the CMVT-QR20; pack contents: 2 magnets and 2 mounting screws	

Function accessories

Type code	Ident-No.		Dimension drawing
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
TBEN-S2-4IOL	6814024	Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A	

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